AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-2. (canceled).

3. (currently amended): The device of ~~claim 1 or 2~~claim 16, wherein the device performs a polymerase chain reaction.

4. (currently amended): The device of ~~claim 1 or 2~~claim 16, wherein the heating block of the assemblies, the first temperature-adjustable heating block, and the second temperature-adjustable heating block are controlled at different temperatures by a heater and a temperature sensor.

5. (currently amended): The device of ~~claim 1 or 2~~claim 16, wherein the heating blocks of the assemblies, the first temperature-adjustable heating block, and the second temperature-adjustable heating block are made of a heat conductive metal selected from the group consisting of copper, iron, aluminum, brass, gold, silver, and platinum.

6. (currently amended): The device of ~~claim 2~~claim 16, wherein the insulating block is made of bakelite or an acrylic polymer resin.

7. (currently amended): The device of ~~claim 1 or 2~~claim 16, wherein the capillary tube is made of a material selected from the group consisting of glass, fused silica, polytetrafluoroethylene, and polyethylene.

8. (currently amended): The device of ~~claim 1 or 2~~claim 16, wherein the outer wall of the capillary tube is coated with polyimide or polytetrafluoroethylene.

9. (currently amended): The device of ~~claim 1 or 2~~claim 16, wherein the inner wall of the capillary tube is coated with at least one material selected from the group consisting of trimethylchlorosilane, dimethyldichlorosilane, methyltrichlorosilane, trimethylmethoxysilane, dimethyldimethoxysilane, and methyltrimethoxysilane.

10. (canceled).

11. (currently amended): The device of ~~claim 10~~claim 16, wherein the capillary tube is fit into a helical groove formed on the outer surface of the ~~heating blocks~~assembly.

12. (currently amended): The device of ~~claim 10~~claim 16, wherein the capillary tube is wound 10 to 50 times.

13. (canceled).

14. (currently amended): The device of ~~claim 1 or 2~~claim 16, which detects the degree of the reaction in real-time, further comprising:

(a) a fluorescence-inducing apparatus having a light source for inducing fluorescence, a unit for detecting fluorescence, and an optical system for collecting emitted fluorescence to the unit for detecting fluorescence after light irradiation to the capillary tube; and

(b) a scanning unit changing the relative positions of the fluorescence-inducing apparatus and the capillary tube.

15. (original): The device of claim 14, wherein the reaction is a polymerase chain reaction.

16. (currently amended): A high-throughput multiplex device for performing continuous-flow reactions, comprising

~~wherein~~ at least two heating block-insulating block assemblies, said respective heating block-insulating block assembly having a capillary tube winding around its external surface,

wherein the heating block and insulating block are assembled to provide the capillary tube with a cyclic contact with the heating block and the insulating block;

~~are assembled with at least two~~ a first temperature-adjustable heating block~~s~~ disposed to be contact with the capillary tube around the insulating block of the assemblies; and

a second temperature-adjustable heating block, which is disposed by a distance from the first temperature-adjustable heating block and to be contact with the capillary tube around the insulating block of the assemblies;

~~to perform at least two independent reactions, and a capillary tube is wound on each assembly~~ wherein the capillary tube has a first open end for fluid inlet and a second open end for fluid outlet to permit a continuous flow of a fluid from the first open end to the second open end; and

wherein the fluid flowing from the first open end to the second open end of the capillary tube is in contact, in a sequential and cyclic manner, with the heating block of the assembly, the first temperature-adjustable heating block, and the second temperature-adjustable heating block.

17. (currently amended): A high-throughput method of performing a continuous-flow nucleic acid amplification, comprising the steps of:

(a) injecting at least one polymerase chain reaction mixture into the first open end of the capillary tube of the device of ~~claim 1 or 2~~claim 16; and

(b) controlling the flow rate of the polymerase chain reaction mixture at an appropriate speed and collecting a polymerase chain reaction product discharged from the second open end.

18. (currently amended): The method of claim 17, wherein ~~the number of solid heating blocks of the device of claim 1 or 2 is three,~~ the temperature of the heating block of the assembly is 95-100 °C, the temperature of the first temperature-adjustable heating block is 45-65 °C, and the temperature of the second temperature-adjustable heating block is 65-72 °C; and wherein the capillary tube contacts in a sequential~~ly~~ and cyclic manner with the heating block of the assembly, the first temperature-adjustable heating block, and then the second temperature-adjustable heating block. ~~or repetitively the heating blocks each of whose temperature is set at 95~100°C, 45~65°C, and 65~72°C.~~

19. (original): The method of claim 17, wherein the capillary tube repetitively contacts the heating blocks 10 to 50 times.

20. (original): The method of claim 17, wherein the polymerase chain reaction mixture comprises $MgCl_2$, dNTP mixture, at least one primer, at least one thermophilic DNA polymerase, a thermophilic DNA polymerase buffer, and at least one template DNA.

21. (original): The method of claim 20, wherein the primer is a molecular beacon.

22. (original): The method of claim 20, wherein the polymerase chain reaction mixture further comprises at least one intercalating dye that emits fluorescence when intercalated into double-stranded DNA.

23. (original): The method of claim 17, wherein the polymerase chain reaction mixture moves from the first open end to the second open end by a pump.

24. (original): The method of claim 17, wherein the polymerase chain reaction mixture is injected continuously or discontinuously in step (a).

25. (original): The method of claim 24, wherein when polymerase chain reaction mixture is injected discontinuously in different compositions each other, an organic solvent or air is injected between injections.